UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IV
345 COURTLAND STREET
ATLANTA, GEORGIA 30365

JAN 14 1981

REF: 4AH-AF

Mr. Steve Smallwood, Chief
Bureau of Air Quality Management
Division of Environmental Programs
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301

RE: Jacksonville Electric Authority
New Power Generating Station
PSD-FL-010

Dear Mr. Smallwood:

Enclosed for your review and comment are the Public Notice and Preliminary PSD Determination for the reference source located near Jacksonville, Florida. The public notice will appear in a local newspaper, Florida Times Journal, in the near future.

Please let my office know if you have comments or questions regarding this determination. You may contact Mr. Kent Williams, Chief, New Source Review, 404/881-4552 or Mr. Jeffrey Shumaker of TRW Inc. at 919/541-9100. TRW Inc. is under contract to EPA, and TRW personnel are acting as authorized representatives of the Agency in providing aid to the Region IV PSD review program.

Sincerely yours,

Tommie A. Gibbs

Tommie A. Gibbs, Chief
Air Facilities Branch

TAB:JLS:cg

Enclosure

PUBLIC NOTICE

A new air pollution source is proposed for construction by the Jacksonville Electric Authority near the town of Jacksonville in Duval County, Florida. The source is a new power generating complex that will increase emissions of air pollutants by the following amounts in tons per year:

Sulfur Dioxide	Particulate Matter	Nitrogen Oxides	Carbon Monoxide	Volatile Organic Compounds
9015	377	7117	593	29

The maximum increment consumed by the proposed new source is as follows:

	Annual	24-Hour	3-Hour
Sulfur Dioxide			
Class I	50%	80%	72%
Class II	10%	46%	65%
Particulate Matter			
Class I	10%	20%	--
Class II	12%	46%	--

Note that no allowable 3-hour increments have been established for particulate matter.

The proposed construction has been reviewed by the U.S. Environmental Protection Agency (EPA) under Federal Prevention of Significant Deterioration (PSD) Regulations (40 CFR 52.21), and EPA has made a preliminary determination that the construction can be approved provided certain conditions are met. A summary of the basis for this determination and the application for a permit submitted by the Jacksonville Electric Authority are available for public review in the Information Services Division, City Hall, 200 E. Bay Street, Jacksonville, Florida.

Any person may submit written comments to EPA regarding the proposed modification. All comments, postmarked not later than 30 days from the date of this notice, will be considered by EPA in making a final determination regarding approval for construction of this source. These comments will be made available for public review at the above location. Furthermore, a public hearing can be requested by any person. Such requests should be submitted within 15 days of the date of this notice. Letters should be addressed to:

Mr. Tommie A. Gibbs, Chief
Air Facilities Branch
U.S. Environmental Protection Agency
345 Courtland Street, NE
Atlanta, Georgia 30365

Preliminary Determination
Jacksonville Electric Authority
PSD-FL-010

I. Applicant

Jacksonville Electric Authority
P. O. Box 53015
233 W. Duval Street
Jacksonville, Florida 32201

II. Location

The Jacksonville Electric Authority (JEA), in cooperation with the Florida Power and Light Company (FPL), proposes to construct a new power generating facility consisting of two 600 megawatt (MW) coal-fired steam generating units in Duval County, Florida. The construction site, known as the Eastport site, is located adjacent to the existing JEA Northside Generating Station, approximately 15 kilometers northeast of downtown Jacksonville, Florida. The UTM coordinates of the proposed source are 446.9 kilometers north and 366.3 kilometers east.

III. Project Description

The applicant proposes to construct a new power generating station consisting of two 600 MW turbine-generator units powered by two pulverized coal-fired steam generators (boilers), an auxiliary boiler, and coal, limestone, and fly ash handling facilities. The two proposed steam generators will fire a maximum of 5928 million Btus per hour (MM Btu/hr) each or approximately 282.3 tons per hour each of a medium bituminous coal having a maximum higher heating value of 10,500 Btu/lb. Of the coals under consideration, the maximum sulfur content coal has 4.0 percent sulfur by weight.

A 200 MMBtu/hr auxiliary boiler will be utilized to provide start-up and shut-down capability for the two turbine-generating units. The auxiliary boiler will be fired with No. 2 fuel oil having a maximum sulfur content of .76 percent by weight (wt. %) and a maximum higher heating value of 19,000 Btu/lb.

The cooling system will consist of two counterflow natural draft cooling towers located at the north end of the plant.

The coal handling facility provides for water delivery of coal by ocean-going barge or ship to a marine terminal located on Blount Island, Florida where a 30-acre coal surge pile will be operated. The coal will be transferred from the marine terminal to the proposed plant site by a shuttle train. The coal handling equipment at the proposed plant site includes a rotary car dumper, yard area coal storage, transfer system, coal silos, and tripper floor distribution system. Approximately 10,000 tons per day of coal will be unloaded at the proposed source.

Limestone will be delivered to the proposed source by truck and stored in long-term silos or day storage silos.

IV. Source Impact Analysis

PSD regulations amended in the August 7, 1980 Federal Register require that a new fossil fuel fired steam electric plant with potential emissions of 100 or more tons per year of any pollutant regulated under the Act undergo a PSD review for each pollutant regulated under the Act which results in a significant net increase in emissions. Table 1 presents an emissions summary for the proposed new source. The proposed new source has potential emission increases of sulfur dioxide (SO_2) and other pollutants of greater than 100 tons per year and significant increases in particulate matter (PM), nitrogen oxides (NO_x), carbon monoxide (CO) and SO_2. Therefore, a PSD review is required for SO_2, NO_x, PM, and CO. A full PSD review consists of the following:

A. A demonstration that Best Available Control Technology (BACT) is being applied to all facilities emitting SO_2, PM, NO_x, and CO;

B. An analysis of existing air quality;

C. A demonstration that the source will not cause or contribute to any NAAQS violations;

D. A PSD increment analysis;

E. A growth analysis;

F. An analysis of impacts on soils, vegetation, and visibility; and

G. A Class I area analysis.

The proposed new source will be located in an area considered attainment for all pollutants under review. Non-attainment areas for PM and ozone are located in the vicinity of Jacksonville, Florida, approximately 10 to 15 kilometers from the proposed new source.

The JEA's application was considered complete prior to August 7, 1980.

A. Best Available Control Technology (BACT)

Paragraph (i)(9) of the August 7, 1980 PSD regulations exempts this source from paragraph (j) of the regulations. Instead, paragraph (j) of the June 19, 1978 PSD regulations applies. Therefore, BACT must be applied to all emission units emitting SO_2, PM, NO_x, and CO because allowable emissions of these pollutants are greater than 50 tons per year.

Sulfur Dioxide

BACT must be applied to the two proposed steam generators (boilers) and the auxiliary boiler to control SO_2 emissions.

The applicant proposes to install a lime/limestone flue gas desulfurization (FGD) system on each of the proposed steam generators as BACT for SO_2. The SO_2 removal efficiency of a single FGD system is 90 percent (.76 lb/MM Btu SO_2 emissions).

Two other emissions control systems, a lime/limestone FGD with a 95 percent SO_2 removal efficiency and a lime spray drying FGD with a 90 percent SO_2 removal efficiency, were examined. The incremental cost of the higher efficiency lime/limestone FGD system was determined not to be cost effective with respect to the resulting improvement in air quality.

The lime spray drying FGD system was determined to be neither reliable nor cost effective. These alternate control systems were rejected based upon the above economic and potential environmental impact considerations. The New Source Performance Standard (NSPS) for electric utility steam generation was promulgated June 11, 1979. The NSPS limits SO_2 emissions to 10 percent of potential SO_2 emissions and a maximum emission rate of 1.2 lb/MMBtu heat input except when the emissions are less than 0.6 lb/MMBtu. At the later emission rate, a minimum of 70 percent reduction (30 percent of potential emitted) in potential SO_2 emissions is required. The percentage reduction in potential SO_2 emissions is dependent upon the sulfur content of the coal. The proposed SO_2 control system meets all requirements of the NSPS for electric utility steam generation stations for the control of SO_2 emissions. A continuous monitor for sulfur dioxide emissions will be installed in the flue of both steam generators in accordance with 40 CFR 60.47a. The above emissions control system represents BACT for SO_2 emissions from the two proposed steam generators.

The auxiliary boiler will be fired with .76 wt.% sulfur fuel oil. The SO_2 emissions from the auxiliary boiler are small when compared to those from the main units. Also, the auxiliary boiler will be operated on an intermittent basis (annual capacity factor of 5 percent) and will not operate simultaneously with the main power generating boilers. Therefore, the air quality impacts due to operation of the auxiliary boiler will be much less than those resulting from the operation of the main boilers. Based on the above analysis, BACT for SO_2 emissions from auxiliary boiler has been determined to be the firing of .76 wt.% sulfur fuel oil.

Particulate Matter

Application of BACT is required for the emissions of PM from the two steam generators (boilers), auxiliary boiler and coal, flyash, and limestone handling facilities.

BACT for PM emissions from the two steam generators has been determined to be the installation of an electrostatic precipitator with a PM removal efficiency of 99.78 percent (.03 lb/MM Btu). Two alternative systems, a electrostatic precipitator with a PM removal efficiency of 99.85 percent (.02 lb/MM Btu) and a fabric filter with a PM removal efficiency of 99.78 percent (.03 lb/MM Btu), were examined in the BACT analysis. The higher efficiency electrostatic precipitator was determined not to be cost effective with respect to the resulting improvement in ambient air quality. The fabric filter system was considered neither reliable nor cost effective. These alternative control systems were rejected on the basis of the above economic and environmental impact considerations. The NSPS for electric utility steam generation limits PM emissions to .03 lb/MM Btu heat input. The proposed PM emissions control system meets the NSPS requirements for control of PM emissions. A continuous monitor for opacity emissions will be installed in the flue of both stream generators in accordance with 40 CFR 60.47a. The above system has been determined to be BACT for PM emissions from the two steam generators.

Control and collection of particulate matter emissions from the coal handling system will be accomplished by several different methods including totally enclosed conveying systems, water spray dust collection systems, and dust collection systems utilizing fabric filters.

Control of fugitive dust from limestone handling will be accomplished by the use of totally enclosed conveyors and fabric filter dust collectors.

Fugitive fly ash emissions will be controlled at all transfer and discharge locations by fabric filters. Pneumatic conveyors are

utilized to transfer fly ash to and from ash storage silos, and to mixers which prepare the fly ash and FGD wastes for disposal.

Fugitive dissolved and suspended particulate emissions from the cooling tower will be controlled by high efficiency drift eliminators. Additionally, a circumferential drift eliminator wall will be provided at the base of the hyperbolic shell to mitigate the potential effects of blow-through. Table 2 presents a fugitive emissions and controls summary.

The above emission control systems represent BACT for fugitive emissions.

BACT for PM emissions from the auxiliary boiler has been determined to be the firing of No. 2 fuel oil with an ash content of 0.1 wt.%. The auxiliary boiler will not operate simultaneously with the main steam generating unit and the air quality impact from the auxiliary boiler is small when compared to the emissions from the main units. Therefore, no air pollution control equipment for the purpose of PM reduction is warranted.

Nitrogen Oxides and Carbon Monoxide

BACT must be applied to the two steam generators and the auxiliary boiler to control NO_x and CO emissions. Emissions of NO_x and CO resulting from the combustion of coal is dependent on such factors of boiler design as the amount of excess air in the combustion chamber, flame temperature, burner spacing and burner design.

The applicant proposes to use combustion controls and modern boiler design to guarantee a maximum NO_x emission rate of 0.6 lb/MM Btu and CO emission rate of 0.05 lb/MM Btu in the two steam generators (boilers). This is in agreement with the NO_x emission limit required in the NSPS for steam electric generating stations. Control of NO_x and CO emissions will be accomplished by a flue gas oxygen monitoring system to control the air/fuel ratio in accordance with the attached "Use of Flue Gas Oxygen Meter as BACT for Combustion Controls." In addition, a continuous nitrogen oxides meter will be installed in the flue at both steam generators in accordance with 40 CFR 60.47a.

BACT for NO_x and CO emissions from the auxiliary boiler will be accomplished by a flue gas oxygen monitoring system in accordance with the attached "Use of Flue Gas Oxygen Meter as BACT for Combustion Controls."

The above emissions control system represents BACT for NO_x and CO emissions from the two steam generators and the auxiliary boiler.

B. Analysis of Existing Air Quality

Paragraph (i)(9) of the August 7, 1980 PSD regulations exempts this source from paragraph (m)(1) of the regulations. Instead, paragraph (n) of the June 19, 1978 PSD regulations apply. Therefore, an analysis of existing air quality for SO_2, PM, NO_x, and CO is required as deemed necessary by the Administrator because the allowable emissions increases of these pollutants are greater than 50 tons per year.

Monitoring data for SO_2, NO_x, and PM were obtained from the New Berlin monitoring site near Jacksonville, Florida for the year 1977. Monitoring data for CO was not available; however, the area surrounding the proposed new source has been classifed attainment or unclassified for CO and therefore no NAAQS violations for CO are expected.

An air quality analysis using meterological data from the Jacksonville International Airport was used to determine the maximum pollutant concentrations at the monitoring site when the contributions from large existing sources of pollution were negligible. These sources were the JEA Northside plant and the St. Regis Paper Company. These maximum background pollutant concentrations were determined to be representative of the existing air quality in the region of the proposed source. All monitoring, data collection procedures, and modeling analyses were conducted using EPA-approved techniques. The monitoring data was utilized in the NAAQS analysis in projecting the maximum ambient air concentrations of each pollutant under review. The results are shown in Table 3.

C. NAAQS ANALYSIS

The EPA-approved dispersion models CRSTER (modified for use with multiple point sources of emissions) PTMPT and PAL were utilized to assess the total ambient air concentrations of SO_2, PM, NO_x and CO within 50 km of the proposed plant site. Meteorological data for the years 1970-1974 were obtained from weather stations located at Jacksonville International Airport (surface data) and Waycross, Georgia (upper air observations). The meteorological data was determined to be representative of the weather conditions at the proposed construction site.

An emissions inventory of all increment consuming and other sources within 50 km of the proposed plant, and new sources within 100 km of the nearest Class I area was compiled. For the purpose of the modeling analysis, the main steam generating units were considered to operate continuously. This is a conservative assumption because the plant capability factor is expected to be no greater than 74 percent.

An initial modeling analysis determined that the 1973 meteorological data represented the "worst-case" year assuming a 100 percent plant load. Additional modeling at 75 percent and 50 percent load showed that a 100 percent continuous operating load resulted in the highest ground level concentrations. Therefore, the more detailed analyses were conducted using the emission parameters for the 100 percent load level. All modeling was conducted using EPA-approved modeling techniques. All stacks were modeled at Good Engineering Practice (GEP) stack height. No effects on the projected ambient air concentrations of pollutants were expected to occur as a result of turbulent building wake effects (downwash) because all stacks met GEP stack height.

The maximum ambient air concentrations for the pollutants under review were determined by modeling emissions from the proposed new source along with emissions from the JEA Northside plant and St. Regis Paper Company. The maximum concentrations obtained from the modeling analysis were added to the maximum monitored concentrations (which did not include contributions from the St. Regis Paper Company or the JEA Northside Plant) to obtain the

maximum ambient air concentrations of each pollutant under review. This analysis is considered conservative because both the maximum monitored and modeled concentrations were not located at the same geographical point. The results of the NAAQS analysis are presented in Table 3.

A modeling analysis was conducted to determine the impact of PM emissions (including fugitive PM emissions) from the proposed new source on the PM non-attainment area located in the downtown Jacksonville, Florida area. The maximum impacts were projected to be below 1 ug/m^3 on a 24-hr average. These values are below the PSD modeling significance levels as defined in the June 19, 1978 PSD regulations, 43FR26358. Therefore, the proposed new source will not significantly impact the PM non-attainment area which is in compliance with the August 7, 1980 PSD regulations paragraph (f)(4)(a).

The VOC emissions from the proposed new source are not expected to impact the ozone non-attainment area located near Jacksonville, Florida. Presently, no EPA-approved dispersion models exist with which to model ozone emissions (of which VOC is a precursor). The VOC emission levels from the proposed new source are small and therefore are not expected to significantly impact the ozone non-attainment area under any meteorological conditions.

D. Increment Analysis

The models and meteorology for determination of PM and SO_2 increment consumption were the same as those discussed in the NAAQS analysis (above). All increment consuming sources potentially affecting the ambient air quality in the area of the proposed new source were included in the modeling analysis. No violations of the Class II increment standards were predicted. The results are presented in Table 4.

E. Growth Analysis

The proposed new source is expected to directly employ 200 people. Most of these workers will come from the local work force. No air quality impacts resulting from industrial, commercial, or residential growth associated with the proposed new source are expected.

F. Soils, Vegetation and Visibility Analysis

No soils vegetation or visibility impacts are expected to occur due to emissions from the proposed new source because of the relatively small increase in ambient pollutant concentrations.

G. Class I Area Analysis

The nearest Class I area to the proposed new source is the Okefenokee Swamp whose borders are located between 61 and 73 kilometers in a northwestly direction. The models and meteorology used in the increment and NAAQS analyses were utilized to predict the maximum SO_2 and PM increment consumption at the borders of the Class I area. All increment consuming sources potentially impacting the Class I area were included in the modeling analysis. Five years of meteorological data were modeled. No violations of the Class I increments were predicted. The results are presented in Table 5.

No impacts on Class I area soils, vegetation or visibility are expected due to the low level of ambient air concentrations projected in the Class I area for any pollutant under review. The results of this analysis will be forwarded to the Federal Land Managers responsible for this Class I area for comment on the significance of the Class I impacts.

V. Conclusion

EPA proposes a preliminary determination of approval with conditions for construction of the steam electric generating station proposed by the Jacksonville Electric Authority. This determination is based upon the application received May 28, 1980 and additional information dated July 8, 1980 and November 26, 1980 (application determined complete as of July 9, 1980). The determination of approval is contingent upon the following specific conditions:

1. The proposed steam generating station will be constructed and operated in accordance with the capabilities and specifications of the application including the 600 megawatt generating capacity and the 5928 MMBtu/hr heat input rate for each steam generator.

2. Emissions will not exceed the allowable emissions listed in Table 6 for SO_2, PM, NO_x, and CO.

3. Compliance with the allowable emission limits for emission points 1, 2, and 3 in Table 6 will be demonstrated with performance tests conducted in accordance with the provisions of 40 CFR 60.46a, 48a and 49a, including applicable test methods, sampling procedures, sample volumes, sampling periods, etc.

   Compliance with the emission limitations of all emission points in Table 6 will be in accordance with 40 CFR 60, Appendix A; Method 5, Determination of Particulate Emissions from Stationary Sources; Method 6, Determination of Sulfur Dioxide Emissions from Stationary Sources; Method 7, Determination of Nitrogen Oxide Emissions from Stationary Sources; Method 9, Determination of the Opacity of Emissions from Stationary Sources; and Method 10, Determination of Carbon Monoxide Emissions from Stationary Sources.

   Emission points 4 thru 13 of Table 6 are exempted from mass emission rate compliance tests unless opacity limits are exceeded or the Administrator (or his representative) otherwise determines that such performance testing is required. All facilities will operate within 10 percent of maximum operating opacity during performance testing.

4. A flue gas oxygen meter shall be installed in emission points 1, 2, and 3 of Table 6 to continuously monitor a representative sample of the flue gas. The oxygen monitor shall be used with automatic feedback or manual controls to continuously maintain low excess air (LEA) air/fuel ratio parameters. Performance tests shall be conducted and operating procedures established in accordance with the attached "Use of Flue Gas Oxygen Meter as BACT for Combustion Controls."

   The applicant will install and maintain a continuous monitoring and recording opacity meter, as well as sulfur dioxide and nitrogen oxide analyzers for each steam generator (emissions units 1 and 2 of Table 6) in accordance with the provisions of 40 CFR 60.47a.

5. Emission points 1 and 2 of Table 6 shall fire coal with an ash content not to exceed 18% and a sulfur content not to exceed 4% by weight. Coal sulfur content shall be determined and recorded in accordance with 40 CFR 60.47a.

   Emission point 3 of Table 6 shall fire No. 2 fuel oil with a maximum sulfur content of .7 percent by weight and a maximum ash content of .01 percent by weight. Samples of fuel oil shall be taken and analyzed for sulfur and ash content once per day or whenever new supplies are received, whichever time period is shortest. Records of the analyses shall be recorded and kept for public inspection for a minimum of two years after the data is recorded.

6. The following requirements will be met to minimize fugitive emissions of particulate from the coal storage and handling facilities, the limestone storage and handling facilities, haul roads and general plant operations:

   a. All conveyors and conveyor transfer points will be enclosed to preclude PM emissions.

   b. Coal storage piles will be shaped, compacted and oriented to minimize wind erosion;

   c. Water sprays for storage piles, handling equipment etc., will be applied during dry periods and as necessary to all facilities to maintain an opacity of "no visible emissions";

   d. The limestone handlng receiving hopper, transfer conveyors and day silos will be maintained at negative pressures with the exhaust vented to a control system; and

   e. The fly ash handling system (including transfer and silo storage) will be maintained at negative pressures and vented to the control system.

7. Within 90 days of commencement of operations, the applicant will determine and submit to EPA the pH level in the scrubber effluent that will ensure 90% removal of the SO_2 in the flue gas. Moreover, the applicant is required to operate a continuous pH meter equipped with an upset alarm to ensure that the pH level of the scrubber effluent does not fall below this level. The minimum value pH may be revised at a later date provided notification to EPA is made demonstrating the minimum percent removal will be achieved on a continuous basis. Further, if compliance data show that higher FGD performance is necessary to maintain an overall system reduction of greater than or equal to 90%, a higher minimum pH value will be determined and maintained consistent with the required more stringent removal efficiency.

8. Emission point 3 of Table 6 shall not operate simultaneously with emission point 1 or 2 of Table 6.

9. The applicant will comply with all requirements and provisions of the New Source Performance Standard for electric utility steam generating units (40 CFR 60 Part Da). In addition, the applicant must comply with the provisions and the requirements of the attached General Conditions.

10. As a requirement of this specific condition, the applicant will comply with all emissions limits and enforceable restrictions required by the State of Florida Department of Environmental Regulation which are more restrictive, that is lower emissions limits or more strict operating requirements and equipment specifications, than the requirements of specific conditions 1- 9 of this permit.

Table 1. EMISSIONS SUMMARY OF THE PROPOSED JEA POWER GENERATING PLANT

Pollutant	Potential emissions[a]	PSD significance levels
SO_2	9,015	40
PM	377	25
NO_x	7,117	40
CO	593	100
VOC	29	40

[a]Potential emissions calculations are based on a continuous maximum operating capacity.

Table 2. FUGITIVE EMISSIONS AND CONTROL SUMMARY

Process	Type	Amount	Factor	Control	Technique	Emissions (Grams/Sec)
Ship Unloading	Grab Bucket	10,000 Tons/Day	.4LB/Ton[a]	(99.9%)[b]	Dry Collection on Hoppers	.04
Ship Unloading Transfer Points	6 Points	10,000 Tons/Day	.2LB/Ton[a]	(99.9%)[b]	Dry Collection	.06
Ship Unloading Transfer Points	3 Points	10,000 Tons/Day	.2LB/Ton[a]	(97%)[b]	Wet Suppression	.95
Ship Unloading Facility Train	Loading Shed	10,000 Tons/Day	.4LB/Ton[a]	(99.9%)[b]	Dry Collection	.02
Ship Unloading Facility Coal Surge Pile	Active	30 Acres	13LB/Acre/Day[a]	(90%)[a]	Wetting Agents	.20
Rail Car Unloading	Rotary Dumper	10,000 Tons/Day	.4LB/Ton[a]	(97%)[b]	Wet Suppression	.63
Coal Handling Transfer Points	2 Points	10,000 Tons/Day	.2LB/Ton[a]	(99.9%)[b]	Dry Collection	.02
Coal Handling Transfer Points	2 Points	3,300 Tons/Day	.2LB/Ton[a]	(99.9%)[b]	Dry Collection	.01
Coal Handling Transfer Points	6 Points	3,300 Tons/Day	.2LB/Ton[a]	(97%)[b]	Wet Suppression	.62
Coal Handling Transfer Points	7 Points	5,000 Tons/Day	.2LB/Ton[a]	(99.9%)[b]	Dry Collection	.04
Coal Storage at Plant	Active	8 Acres	13LB/Acre/Day[a]	(90%)[a]	Wetting Agents	.05
Coal Storage at Plant	2 Inactive Piles	15 Acres Each	3.5LB/Acre/Day[a]	(99%)[b]	Wetting Agents	.01
Limestone Unloading	Rail Dumper	750 Tons/Day	.4LB/Ton[a]	(99.9%)[b]	Dry Collection	.002
Limestone Transfer Point	1 Point	750 Tons/Day	.2LB/Ton[a]	(99.9%)[b]	Dry Collection	.001
Cooling Towers	Drift	2x603 Grams/Sec	32,963 ppm Solids	21%<50 Microns	Drift Eliminators	8.4

a (Pedco, 1977)
b (Stoughton, 1980)

Table 3. NAAQS ANALYSIS

Pollutant/ averaging time	Monitored[a] background concentration (ug/m^3)	Maximum[b] projected concentration (ug/m^3)	Total concentration (ug/m^3)	NAAQS (ug/m^3)
SO_2				
3-hour	123	987	1,110	1,300
24-hour	45	187	232	365
annual	11	13	24	80
PM				
24-hour	79	27	106	150
annual	37	3	40	75
NO_2				
annual	15	10	25	100
CO				
1-hour	--[c]	108[d]		40,000
8-hour	--[c]	<100[d]		20,000

[a]These values do not include contributions from the JEA Northside Plant and the St. Regis Paper Co.

[b]These concentrations include contributions from the proposed JEA steam electric generating station, the existing JEA Northside Plant and the existing St. Regis Paper Co.

[c]CO monitoring data was not available. However, because of the low ambient air concentrations of CO projected, no violations of the NAAQS for CO is expected.

[d]These values were estimated from the projected SO_2 ambient air concentrations based on worst-case operating load and meteorological conditions.

Table 4. CLASS II INCREMENT ANALYSIS

Pollutant/ averaging time	Maximum[a] Class II increment consumption (ug/m^3)	PSD Class II increment (ug/m^3)
SO_2		
3-hour	334	512
24-hour	42	91
annual	2	20
PM		
24-hour	17	37
annual	2.3	19

[a]These values include contributions from all increment consuming sources impacting the ambient air quality within 50 kilometers of the proposed new source, including the proposed JEA steam electric generating station. Five years of meteorological data was used in the analysis; therefore, these values represent the highest, second highest concentrations.

Table 5. CLASS I INCREMENT ANALYSIS

Pollutant/ averaging time	Maximum[a] Class I increment consumption (ug/m^3)	PSD Class I increment (ug/m^3)
SO_2		
3-hour	18	25
24-hour	4	5
annual	<1	2
PM		
24-hour	<1	5
annual	<1	10

[a]These values include contributions from all increment consuming sources within 100 kilometers of the Class I area including the proposed JEA electric steam generating station. Five years of meteorological data was used in the analysis; therefore, these values represent the highest, second highest concentrations.

Table 6. ALLOWABLE EMISSION LIMITS
(lb/hour; lb/MM Btu)

Emission unit	SO_2	NO_x	PM	CO	Opacity (Percent)
1. Steam generating boiler no. 1 (5,928 MM Btu/hr maximum heat input)	4,502; 0.76 (30 day rolling average)	3,559; 0.6	178; 0.03	296; 0.05	20
2. Steam generating boiler no. 2 (5,928 MM Btu/hr maximum heat input)	4,502; 0.76 (30 day rolling average)	3,559; 0.6	178; 0.03	296; 0.05	20
3. Auxiliary boiler (200 MM Btu/hr maximum heat input)	160; 0.8	60; 0.3	2; 0.01	1; 0.005	10
4. Ship unloading			0.32		no visible emissions
5. Ship unloading transfer points			0.5 (each)		no visible emissions
6. Ship unloading facility train			0.2		no visible emissions
7. Ship unloading facility coal storage pile			1.5		no visible emissions

(continued)

Table 6. (continued)

Emission unit	SO_2	NO_x	PM	CO	Opacity (Percent)
8. Rail car unloading			5		no visible emissions
9. All coal handling transfer points			5 (each)		no visible emissions
10. Coal storage at plant			0.4 (each pile)		no visible emissions
11. Limestone unloading			0.1		no visible emissions
12. Limestone transfer points			0.1 (each)		no visible emissions
13. Cooling towers			67 (each tower)		20

USE OF FLUE GAS OXYGEN METER AS BACT FOR COMBUSTION CONTROLS

Within the time limits specified in General Condition 3 of this permit, the permittee shall determine the emissions of nitrogen oxides and carbon monoxide from the permitted combustion device in accordance with test methods and procedures set out in 40 CFR Part 60, Appendix A, Methods 7 and 10, respectively. These emission determinations shall be made at:

1) Maximum design capacity; and

2) Normal operational load.

The permittee shall install a continuous oxygen monitor in the flue of the permitted combustion device which meets the requirements of 40 CFR Part 60, Appendix B, Performance Specification 3. Results of emission determinations shall be correlated to the flue gas oxygen content to define:

1) The point at which Nitrogen Oxides (NO_x) emissions (lb/MMBtu) equals the allowable NO_x emission rate contained in the permit.

2) The point at which carbon monoxide (CO) emissions exceed the allowable CO emission rate contained in the permit.

The flue gas oxygen content shall be maintained between these points and alarms shall be set to sound when flue gas oxygen levels exceed either side of this range. Any operation outside of this range will constitute noncompliance with this specific condition, shall be recorded in accordance with General Condition 4 of this permit, and will be reported quarterly along with excess emissions in accordance with 40 CFR 60.7 (c).

Should any combustion equipment modifications be made such as different type burners, combustion air relocation, fuel conversion, tube removal or addition, etc., emissions correlations as described above shall be conducted within 90 days of attaining full operation after such modification. Results of all emission determinations shall be sent to the permitting authority within 90 days after completion of the tests.

GENERAL CONDITIONS

1. The permittee shall notify the permitting authority in writing of the beginning of construction of the permitted source within 30 days of such action and the estimated date of start-up of operation.

2. The permittee shall notify the permitting authority in writing of the actual start-up of the permitted source within 30 days of such action and the estimated date of demonstration of compliance as required in the specific conditions.

3. Each emission point for which an emission test method is established in this permit shall be tested in order to determine compliance with the emission limitations contained herein within sixty (60) days of achieving the maximum production rate, but in no event later than 180 days after initial start-up of the permitted source. The permittee shall notify the permitting authority of the scheduled date of compliance testing at least thirty (30) days in advance of such test. Compliance test results shall be submitted to the permitting authority within forty-five (45) days after the complete testing. The permittee shall provide (1) sampling ports adequate for test methods applicable to such facility, (2) safe sampling platforms, (3) safe access to sampling platforms, and (4) utilities for sampling and testing equipment.

4. The permittee shall retain records of all information resulting from monitoring activities and information indicating operating parameters as specified in the specific conditions of this permit for a minimum of two (2) years from the date of recording.

5. If, for any reason, the permittee does not comply with or will not be able to comply with the emission limitations specified in this permit, the permittee shall provide the permitting authority with the following information in writing within five (5) days of such conditions:

   (a) description of noncomplying emission(s),

   (b) cause of noncompliance,

   (c) anticipated time the noncompliance is expected to continue or, if corrected, the duration of the period of noncompliance,

   (d) steps taken by the permittee to reduce and eliminate the noncomplying emission,

   and

   (e) steps taken by the permittee to prevent recurrence of the noncomplying emission.

   Failure to provide the above information when appropriate shall constitute a violation of the terms and conditions of this permit. Submittal of this report does not constitute a waiver of the emission limitations contained within this permit.

6. Any change in the information submitted in the application regarding facility emissions or changes in the quantity or quality of materials processed that will result in new or increased emissions must be reported to the permitting authority. If appropriate, modifications to the permit may then be made by the permitting authority to reflect any necessary changes in the permit conditions. In no case are any new or increased emissions allowed that will cause violation of the emission limitations specified herein.

7. In the event of any change in control or ownership of the source described in the permit, the permittee shall notify the succeeding owner of the existence of this permit by letter and forward a copy of such letter to the permitting authority.

8. The permittee shall allow representatives of the State environmental control agency and/or representatives of the Environmental Protection Agency, upon the the presentation of credentials:

   (a) to enter upon the permittee's premises, or other premises under the control of the permittee, where an air pollutant source is located or in which any records are required to be kept under the terms and conditions of the permit;

   (b) to have access to and copy at reasonable times any records required to be kept under the terms and conditions of this permit, or the Act;

   (c) to inspect at reasonable times any monitoring equipment or monitoring method required in this permit;

   (d) to sample at reasonable times any emission of pollutants;

   and

   (e) to perform at reasonable times an operation and maintenance inspection of the permitted source.

9. All correspondence required to be submitted by this permit to the permitting agency shall be mailed to the:

   Chief, Air Facilities Branch
   Air and Hazardous Materials Division
   U.S. Environmental Protection Agency
   Region IV
   345 Courtland Street
   Atlanta, Georgia 30365

10. The conditions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

The emission of any pollutant more frequently or at a level in excess of that authorized by this permit shall constitute a violation of the terms and conditions of this permit.